REMARKS

Applicant has thoroughly considered the June 2, 2006 final Office action and have amended the application to more clearly set forth the invention. Claims 1, 13, 16-22, 25, 35, 36, 38, and 49-54 have been amended by this Amendment B. Claims 14, 15, 33, 34, and 46 have been canceled by this Amendment B. Claims 1-13, 16-32, 35-45, and 47-56 are presented in the application for further examination. Reconsideration of the application as amended and in view of the following remarks is respectfully requested.

Claim Rejections Under 35 U.S.C. §112

Claims 15, 16, 19-22, 34-36, 46 and 51-54 stand rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the invention. Applicant respectfully disagrees.

First, with respect to claims 15, 16, 34, 35, and 46, the Office asserts that the term "substantially" is indefinite (citing *Ex parte Oetiker*[1]). Applicant respectfully disagrees and again asserts that the specification of the present application provides a standard for ascertaining the requisite degree of definiteness. The MPEP recognizes that the specification need only provide general guidelines such that one of ordinary skill in the art would know what is meant by the phrase. MPEP §2173.05(b). However, to further prosecution, Applicant has canceled claims 15 and 34 and amended claims 16 and 35 to recite "wherein identifying at least one of the tables as a function of the search criteria comprises identifying which of the tables contains metadata associated with all of the attributes and the greatest number of measures specified in the search criteria." Applicant submits that these claims, as amended, are likewise definite and do not constitute new matter. For example, in paragraph 28 of the present application, Applicant describes one embodiment of the invention in which the "procedure component 162 takes the inputs, **matches** them with metadata layer 164, and constructs a set of SQL statements to retrieve data from database 172 in an efficient manner (e.g., the most efficient believed possible **based on the the smallest fact table**

[1] 23 USPQ2d 1641 (Bd. Pat. App. & Inter. 1992).

that contains all attributes and the most measures)." Therefore, the claims are definite and the rejection of claims 15-16, 34-35, and 46 should be withdrawn.

Second, with respect to claims 15, 34, and 46, the Office states that the term "size" is not defined by the claim and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. However, breadth of a claim is not to be equated with indefiniteness[2]. Moreover, Applicant is only required to provide a reasonable degree of particularity and distinctness. In this regard, MPEP section 2173.02 states that "only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must a court declare it indefinite"[3].

Claims 15, 34, and 46 have been canceled and the subject matter has been incorporated into independent claims 1, 25 and 38. The claims recite

> **defining a plurality of tables** for according to the characteristics of the data in the database as described by the metadata;
> **estimating a size of each of the defined tables**;
> **...**
> said procedure further **constructing a query based** on the identified at least one of the **defined tables having the smallest estimated size.**

In other words, the method estimates a size of each of the tables and then selects the table with the smallest estimated size. When read in light of the specification, the term “size” clearly relates to the different table properties and where one or more of these properties may be used to estimate the size of the table. But the term “size” is not indefinite because the modifier “smallest” indicates that however the estimated size is determined for each table, the procedure will construct a query based the table having the smallest estimated size relative to the other identified tables. In other words, the sizes of the tables organized according to the associated metadata may be estimated according to, for example, the fewest number of attributes and/or measures that satisfy the search criteria. Therefore, the rejection should be withdrawn.

Third, with respect to claims 19-22 and 51-54, the claims have been amended to depend from claims 13 and 48 respectively. Therefore, the claims do not contain

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[2] MPEP §2173.04.
[3] Quoting *Metabolite Labs., Inc. v. Lab. Corp of Am. Holdings*, 370 F.3d 1354, 1366 (Fed . Cir. 2004).

features that were optionally recited in claims 18 and 50 and the rejection of claims 19-22 and 51-54 should be withdrawn.

Claim Rejections Under 35 U.S.C. §102

Claims 1, 4, 5, 9, 10, 24, 25, 37, 38, 40, 41, 47, and 56 stand rejected under 35 U.S.C. §102(e) as being anticipated by Lee et al. (U.S. Pub. App. 2003/0028550). Applicant respectfully disagrees.

Lee et al. disclose systems and methods for maintaining workflow information, including workflow-related metadata in tables in a database. (page 7, paragraph 128). Lee et al. further teach that stored procedures **execute** SQL statements to perform operations on the workflow information and that the procedures may be generated "in response to user input specifying the column definitions, e.g., data type and length, for the workflow related tables". (Paragraph 134 and paragraph 140, lines 1-2). According to Lee et al., stored procedures and tables are generated from templates as part of an automatic generation utility. The stored procedures are created when the tables are created and before any request for information is received from the user. (Paragraph 147).

With respect to the present invention, claim 1 as amended recites:

> providing metadata associated with the data in the database, said metadata describing the data according to one or more characteristics of the data;
>
> **defining a plurality of tables** for according to the characteristics of the data in the database as described by the metadata;
>
> **estimating a size of each of the defined tables**;
>
> receiving a request for information from a user, said request specifying search criteria; and
>
> executing a **predefined procedure** for **comparing the search criteria specified by the received request to the metadata** and **identifying at least one of the defined tables as a function of the search criteria**, said procedure further **constructing a query based on the identified at least one of the defined tables having the smallest estimated size**, said **query retrieving selected data from the database at least one of the defined tables having the smallest estimated size** in response to the request for information as a function of the characteristics of the data as described by the metadata for optimizing retrieval of the selected data

As such, embodiments of the invention greatly reduce the need for customized code and the development time needed to expose data warehouse relational data in a flexible and generic manner and, thus, make existing data in relational tables more accessible to ad hoc queries. Furthermore, because the query is based on the identified table having the smallest estimated size, the retrieval of the selected data will be more efficient. Thus, the query is optimized for retrieval of the selected data.

The cited art merely discloses that a stored procedure may be generated from templates and these generated stored procedures are executed when requested. Furthermore, Lee et al. does not teach comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and constructing a query based on the identified table having the smallest estimated size. In contrast, the procedure of the present invention **(1) compares the search criteria in the received request to the metadata; (2) identifies at least one defined tables as a function of the search criteria; and (3) constructs a query based on the identified table having the smallest estimated size**. (Application, page 9-10, paragraph 28). Thus, Lee et al. fail to teach or suggest comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and constructing a query based on the identified table having the smallest estimated size as recited by the claim 1.

Claims 25 and 38 have been similarly amended as claim 1. As explained above, the cited art does not teach or suggest comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and constructing a query based on the identified table having the smallest estimated size and, thus, does not anticipate the claimed invention.

For at least these reasons, Applicant submits that the cited reference fails to teach or suggest each and every element of claims 1, 25, and 38. As such the rejection of these claims under 35 U.S.C. §102 must be removed. Claims 4, 5, 9, 10, and 24 depend from claim 1; claim 37 depends from claim 25; and claims 40, 41, 47, and 56 depend from claim 38. The dependent claims are believed allowable for at least the same reasons as claim 1, 25, and 38 from which they depend.

Claim Rejections Under 35 U.S.C. §103

Claims 2, 3, 6-8, 11, 13, 26-30, 32, 39, 42, 44, 45, and 48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lee et al. in view of Fayyad et al. (U.S. Pat. 6,549,907). Applicant submits the cited references, whether considered separately or together, fail to teach or suggest every limitation of the invention as claimed by Applicant.

Fayyad et al. merely disclose an apparatus and method for compressing contents of a database system to support queries. (Fayyad et al, column 3, lines 1-6). This reference teaches that contents of the database are represented by a probability distribution consisting of a mixture of Gaussians. (Fayyad et al, column 5, lines 23-26). Queries are answered by performing integration over the probability distributions and not by retrieving data from the database. (Fayyad et al, column 9, lines 1-29). Accordingly, the Fayyad et al. reference fails to teach or suggest a predefined procedure comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and **constructing** a query based on the identified table having the smallest estimated size as claimed by Applicant. Thus, Fayyad et al. fail to cure the deficiencies of the primary reference and the rejection of the claims under §103 should be withdrawn.

In addition, claims 2, 3, 6-8, 11, and 13 depend from claim 1; claims 26-30, and 32 depend from claim 25; and claims 39, 42, 44, 45, and 48 depend from claim 38. Thus, these claims are believed to be allowable for at least the same reasons as claim 1, 25, and 38 from which they depend and the rejection should likewise be withdrawn.

Claims 12 and 31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lee et al. in view of Diamond (U.S. Pat. 6,269,368). Claim 12 depends from claim 1 and claim 31 depends from claim 25. Thus, claims 12 and 31 are believed allowable at least the same reasons as claim 1 and 25 from which they depend. The Office contends that Diamond teaches generating a SQL view to display information relating to a query constructed according to the predefined procedure of claims 1 and 25. But the Diamond patent fails to cure the deficiencies of Lee et al. The Diamond patent purports to improve information retrieval by dynamically combining evidence information produced by a plurality of retrieval systems. The Diamond information retrieval system

matches alternative representations of queries with alternative representations of documents. Because the cited art fails to teach or suggest each and every limitation of Applicant's claim 1 or 25, including a predefined procedure comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and constructing a query based on the identified table having the smallest estimated size, Applicant submits the claims are allowable.

Claims 14-16, 33-35, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Fayyad et al. and in further view of Quernemoen (U.S. Pat. 6,542,893). However, claim 16, depends from claim 1 and claim 35 depends from claim 25. Claims 14, 15, 33, 34 and 46 have been canceled. Thus, claims 16 and 35 are believed to be allowable for at least the same reasons as claim 1 and 25 and the rejection should be withdrawn.

Claims 17 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Lei et al. (U.S. Pub. App. 2004/0139043). Applicant submits that the cited art, whether considered separately or together, fails to teach or suggest the claimed invention. Lei et al. merely teach the use of metadata for filtering out rows and columns of data to restrict access to that data. As a result, Lei et al. teach away from constructing a query as a function of the characteristics of data as described by metadata for optimizing retrieval of selected data. In addition, claim 17 depends from claim 1 and claim 49 depends from claim 38 and, thus, these claims are believed to be allowable for at least the same reasons as claim 1 and 38, respectively.

Claims 18-22, 36, and 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Listou (U.S. Pat. 6,134,564). Listou discloses using text data objects to categorize graphic images or audio files and constructing a sort order to display a list of selected text data objects. But Listou does not teach or suggest comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and constructing a query based on the identified table having the smallest estimated size. Thus, the cited art, whether considered separately or together, fails to teach or suggest all of the elements of Applicant's claimed invention. Moreover, claims 18-22, depend from claim 1; claim 36 depends from claim 25; and

claims 50-54 depend from claim 38. Thus, claims 18-22, 36, and 50-54 are believed to be allowable for at least the same reasons as claim 1, 25, and 38.

Claims 23 and 55 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Owens et al. (U.S. Pat. 6,047,284). Owens et al. merely disclose accessing a relational database through an object-oriented querying interface. In contrast to Applicant's claimed invention, Owens et al. do not teach or suggest comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and constructing a query based on the identified table having the smallest estimated size. Thus, the cited art, whether considered separately or together, fails to teach or suggest all of the claimed elements. Moreover, claim 23 depends from claim 1 and claim 55 depends from claim 38 and believed allowable for at least the same reasons as claim 1 and 38 and the rejection should be withdrawn.

Claim 43 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Anand et al. (U.S. Pat. 5,692,181). Anand et al. teach using metadata as a simple mapping of a business concept to a column in a table. (Anand, column 17, lines 59-61). The user can create the metadata, i.e., the mappings. Thus, the query is a straight mapping and does not compare the search criteria in the received request to the metadata to identify at least one of the defined tables. For these reasons, Applicant submits that the cited combination of references fails to teach or suggest comparing the search criteria in the received request to the metadata to identify at least one of the defined tables and constructing a query based on the identified table having the smallest estimated size. Moreover, claim 43 depends from claim 38 and is believed allowable at least the same reasons as claim 38. Thus, the rejection should be withdrawn.

CONCLUSION

In view of the foregoing, Applicant submits that independent claims 1, 25, and 38 are allowable over the cited art. The claims depending from these claims are believed to be allowable for at least the same reasons as the independent claims from which they depend.

It is felt that a full and complete response has been made to the Office action and, as such, places the application in condition for allowance. Such allowance is hereby respectfully requested. Although the prior art made of record and not relied upon may be considered pertinent to the disclosure, none of these references anticipates or makes obvious the recited invention. The fact that the Applicant may not have specifically traversed any particular assertion by the Office should not be construed as indicating Applicant's agreement therewith.

The Applicant wishes to expedite prosecution of this application. If the Examiner deems the claims as amended to not be in condition for allowance, the Examiner is invited and encouraged to telephone the undersigned to discuss making an Examiner's amendment to place the claims in condition for allowance.

The Commissioner is hereby authorized to charge any deficiency or overpayment of any required fee during the entire pendency of this application to Deposit Account No. 19-1345.

Respectfully submitted,

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